

ABSTRACT OF THE DISCLOSURE

This invention relates to a method of coating a metal surface by applying a solution containing an alkanethiol compound and a solvent to a metal surface, allowing the formation of a self-assembled monolayer, which presents as a robust barrier to corrosion. The alkanethiol compounds have a general formula, $R(CH_2)_nSH$, where R represents methyl, carboxyl, hydroxyl, formyl, or amide; n is in the range of 7 to 21, preferably in the range of 12 to 18.